

2GR-FE ENGINE CONTROL SYSTEM

SERVICE DATA

Camshaft timing oil control valve : Standard resistance (1 (+B) - 2 (GND))	6.9 to 7.9 k Ω at 20 °C (68°F)
Camshaft position sensor : Standard resistance (1 (G+) - 2 (G-))	835 to 1,400 Ω at cold 1,060 to 1,645 Ω at hot
Crankshaft position sensor : Standard resistance (1 (Ne+) - 2 (Ne-))	1,630 to 2,740 Ω at cold 2,065 to 3,225 Ω at hot
Engine coolant temperature sensor : Standard resistance (1 (E2) - 2 (THW))	2.32 to 2.59 k Ω at 20 °C (68°F) 0.310 to 0.326 k Ω at 80°C (176°F)
Throttle body : Standard resistance (1 (M-) - 2 (M+))	0.3 to 100 k Ω at 20 °C (68°F)
Knock sensor : Standard resistance (1 (Ground) - 2 (Output))	120 to 280 k Ω at 20 °C (68°F)
Accelerator pedal (ACCEL POS #1) : Standard voltage	0.5 to 1.1 V (accelerator pedal released) 2.5 to 4.5 V (accelerator pedal depressed)
Accelerator pedal (ACCEL POS #2) : Standard voltage	1.2 to 2.0 V (accelerator pedal released) 3.4 to 5.0 V (accelerator pedal depressed)

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TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Intake air surge tank assembly x Intake manifold	18	184	13
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No. 1 surge tank stay x Intake air surge tank assembly	21	214	15
Camshaft timing oil control valve assembly x Cylinder head cover	10	102	7
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VVT sensor x Cylinder head cover	10	102	7
Crankshaft position sensor x Cylinder block	10	102	7
Engine coolant temperature sensor x Water pipe	19.6	200	14
Throttle body x Intake air surge tank assembly	10	102	7
Intake manifold x Cylinder head sub-assembly	21	214	15
Knock sensor x Cylinder block sub-assembly	20	204	15
Water outlet x Cylinder head sub-assembly	15	153	11
ECM x Body	6.5	66	57 in.*lbf
Accelerator pedal rod x Body	5.4	55	48 in.*lbf

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